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Offers a complete directory of colleges and universities participating in the three-two plan of engineering education and describes the historic development of the plan. Under this plan, a number of engineering and nonengineering colleges have entered into cooperative arrangements which make it possible for students to pursue undergraduate programs in both liberal arts and engineering curriculums. The usual pattern permits a student to attend a nonengineering college for 3 years and then attend a cooperating engineering college for 2 years, in both instances following a program agreed upon between the two institutions. Upon completion of satisfactory work, the student receives the bachelor of arts degree from the nonengineering college at the end of his fourth year and the bachelor of science degree in engineering from the engineering college at the end of the fifth year. In some instances, the two colleges are parts of the same university.

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Office of Education

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Highlights

The number of three-two programs has increased continuously since 1903, when the earliest program known to the writer was organized.

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In the fall of 1959 reports from *all* recognized engineering colleges in the United States showed that 55 engineering colleges situated in 26 States were collaborating with 224 nonengineering colleges situated in 40 States and two foreign nations in the conduct of 355 three-two programs.

▲ ▲ ▲

A total of 509 students were enrolled in the engineering part of these programs, and up to that time 1,442 students had received both the liberal arts and engineering degrees under this type of program.

▲ ▲ ▲

A general appraisal of the program leads to the conclusion that although it is not making a large numerical contribution to the production of engineers, it does provide a broader and more diversified type of education than the regular 4-year engineering program, and is making a worthwhile contribution to engineering education.

▲ ▲ ▲

A complete directory of participating institutions, both engineering and nonengineering, showing which institutions in each category collaborate with which institutions in the other category, is included.

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The three-two plan *of* engineering education

By Henry H. Armsby,
Chief for Engineering Education
Division of Higher Education

U.S. DEPARTMENT OF
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Foreword

THE THREE-TWO PLAN has been developed, chiefly in recent years, as one method of attacking the problem of the proper allocation of time in undergraduate engineering education between the liberal and technical subdivisions of the curriculum. The growth in the number of such programs is a clear indication that this relatively new development is serving a useful purpose in the education of engineers so greatly needed in our national economy. The U.S. Office of Education believes that this development has implications, particularly for engineering education, and perhaps in other fields, and that a brief study of this type of program is a worthwhile activity for the Office.

Of special value at this time to educational administrators and to guidance counselors and students is a directory of the institutions, engineering and nonengineering, which are conducting this type of program. A major purpose of this bulletin is to provide such a directory.

HOMER D. BABBIDGE, JR.
Assistant Commissioner
for Higher Education

The Three-Two Plan of Engineering Education

Introduction

ONE OF THE PROBLEMS which has increasingly engaged the attention of engineering educators, especially during the last few decades, has been the allocation of time in undergraduate engineering education between the two major subdivisions of an engineering curriculum, the liberal and the technical. With the growing tendency of industry to call engineers to managerial and administrative positions, it has become increasingly important that engineering education should include such cultural or liberal education as will enable engineers to be well-rounded men, able to carry their share of the duties of good citizens, and able to understand the social, political, and economic implications of their scientific and engineering activities.

The Three-Two Plan

One method of attack on this problem which is gaining in popularity consists of cooperative arrangements between engineering colleges and nonengineering colleges under which students are enabled to pursue combined liberal arts and engineering curriculums. In some, the two colleges are parts of the same university. The usual pattern, generally called the "three-two plan," provides that a student attend a nonengineering college for 3 years, taking a program agreed upon between the two institutions, and then attend the engineering college for 2 years. If his work is completed satisfactorily, he receives the bachelor of arts degree from the nonengineering college at the end of his fourth college year, and at the end of his fifth year the bachelor of science degree in engineering from the engineering college. The engineering degree is normally based on a 4-year curriculum in engineering.

Development of the Three-Two Plan

Apparently the earliest organized three-two plan was at Case Institute of Technology, Cleveland, Ohio, which had such a program from 1903 to 1927 in collaboration with Adelbert College in the same city. A few other institutions have had programs for many years, but much of the growth in popularity in this type of educational program is comparatively recent.

Since 1952 several lists of three-two programs have been published by the author of this bulletin and others, most of which were based on fragmentary information received from various sources. In October 1952 the *New York Times* reported 13 programs. In the December 1953 issue of *Higher Education*, a journal of the Office of Education, appeared a list of 25 engineering colleges collaborating with 120 different nonengineering colleges situated in 32 States. In July 1959 a list prepared by this writer tabulated 42 engineering colleges in 19 States, which were collaborating with 164 nonengineering colleges in 37 States in the conduct of 266 three-two programs.

Current Programs

In the fall of 1959 information on current three-two programs was supplied by officials of every recognized engineering college in the United States, in connection with the preparation of OE Circular 635 (OE–56003) *Trends in Engineering Education, 1949 to 1959*. These reports show that at that time 55 engineering colleges situated in 26 States were collaborating with 224 nonengineering colleges situated in 40 States and two foreign nations in the conduct of 355 three-two programs.

The extension of the plan to foreign countries is a recent and perhaps significant development. In the fall of 1959 the Mexico City College and the University of the Andes in Colombia were collaborating with three engineering colleges in the United States in the conduct of four such programs.

The data show further that in the 355 programs in operation in the fall of 1959, there were enrolled in the engineering part of the program a total of 509 students, and that up to that time 1,442 students had received both the liberal arts and engineering degrees under this type of program. No data were reported on the numbers of students enrolled in the nonengineering part of the programs.

There are apparent discrepancies in numbers in the above statements because many of the engineering colleges are associated with a considerable number of nonengineering colleges, and some of the nonengineering colleges collaborate with more than one engineering

college. For example, of the nonengineering colleges included in the 1959 tabulation, 52 were collaborating with two engineering colleges each; 23 with three each; and 10 with four or more each. In short, 224 different nonengineering colleges accounted for the 355 programs in which 55 engineering colleges were collaborating.

How the Plan Operates

The general pattern of the three-two program, as described by engineering school officials, includes no formal contract between the schools concerned, but considerable discussion between their officials leading to an agreement on administrative procedures and on the courses to be offered at the nonengineering college and at the engineering college. The engineering college usually accepts only students recommended by the faculty of the nonengineering college.

Several of the statements mention the desirability of keeping the list of participating institutions small so that engineering college officials can become well acquainted with the collaborating institutions and their staffs.

Administrative details described by institutional officials include such items as the exchange between institutions of the results of aptitude, achievement, and other tests and scholastic records, to aid both institutions in guiding and counseling participating students. Joint pamphlets and publicity materials are prepared by the two institutions. Each institution appoints a liaison officer to facilitate the administration of the program. During the last half of the third year a review is made of the records of students eligible for transfer according to standards agreed upon by the two institutions. The nonengineering college certifies to the engineering college the names of students it is willing to fully recommend. Conferences of instructional and administrative personnel associated with the program at the two institutions are held to develop improved articulation between them.

The Course of Study

A typical statement concerning the course of study reads as follows: "The first three years of study will be carefully designed to include the necessary mathematics, science, and other preengineering subjects. Because of the rigorous nature of the engineering curriculum above average grades must be secured during these years to qualify the student for the later engineering work. In some cases a summer course sometime during the five-year period may be needed to complete

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all requirements." (The summer camp is mentioned by several of the engineering college officials.)

One official included a statement of the requirements established for the first 3 years at the nonengineering college, expressed in terms of comparable courses at his engineering college. He said, "There has been little difficulty among our associates in meeting these requirements, possibly because we are not too insistent on exact equivalents. All we aim for is a program which will permit entering our junior work without handicap to the student." The requirements cover a total of 40 credit hours in chemistry, mathematics, physics, and drawing, and 30 hours in English, economics, history, literature, and psychology. This is followed by specific additional requirements for certain curriculums in the engineering college, and by a list of suggested electives, which include economics, language, government or political science, history, literature, mathematics, philosophy, advanced chemistry, sociology, and statistics.

Variations of Three-Two Plan

Two variations of the three-two plan have come to the attention of the writer in recent months. One of these programs provides that students attend Lincoln University for three years, followed by 3 years in the engineering cooperative education program at Drexel Institute of Technology, Philadelphia, Pa., which includes 15 months in industrial and professional assignments under Drexel's cooperative education program. Upon completion of the 6-year program, the two degrees will be awarded.

Michigan State University has announced a program which might be called a "two-three" plan, designed primarily to prepare engineering students for work overseas after graduation. In this program the student takes the usual engineering courses for the first 2 years. In the third, fourth, and fifth years he takes the remaining engineering courses, along with liberal arts courses. Completion of this program leads to the receipt of the bachelor of science degree and the bachelor of arts degree, both from the Michigan State University.

Advantages to the Student

Advantages to the student are pointed out by several of the engineering college officials. The following paragraphs are paraphrased or quoted directly from their statements.

This program permits a student to receive liberal and technical education at relatively low cost, by getting a part of his education

at a college nearer to his home than the engineering college from which he hopes to graduate. This helps to provide the Nation with critically needed trained engineers.

The student who is undecided as to the general direction of his future, particularly the boy who is perhaps a little immature for a large institution, might well enter the smaller nonengineering college. If he finds his college mathematics and physics uncongenial, he can shift to a program with less emphasis on science without the need of transferring elsewhere. In general, the student who wishes a taste of life in a smaller college and who is willing to devote 5 years to his undergraduate education may well find the plan suited to his needs.

During the 3 years of study in the nonengineering college an undergraduate is a member of a group with the same interests and tastes. He is likely to absorb much of its atmosphere as well as to acquire a basic knowledge of mathematics and the sciences. Entering the engineering college as a junior on the semiprofessional basis, he is able to devote himself primarily to courses which have an immediate bearing on his future as an engineer.

This program provides a planned sequence of courses which guarantees acceptance at an engineering college, an opportunity which might be denied a student of equivalent standing not participating in the program.

Lafayette College, Easton, Pa., which is sponsored by the Board of Christian Education of the Presbyterian Church, has established three-two programs with 25 nonengineering colleges similarly sponsored, making it possible for students to pursue the entire combined curriculum "with the advantages of attending a more personal church-related college."

Student Difficulties

Students in the three-two program appear to have no more difficulty in making the adjustment to a new institution than students usually have in transferring from one institution to another.

One college official states that the three-two students often become leaders in student activities. He says, "Apparently their three years of experience in an environment where there may not have been quite as heavy an academic responsibility, has meant that they get started doing other things besides academic work, and they continue to do so after transfer."

In another institution an official writes; "There is a break in student activity. Most students do not carry on with their activities—they feel they have had their college life and now wish to receive professional training." He believes that the majority of boys with

a clear-cut interest in and a bent for engineering or science prefer to enter his school directly from a secondary school. This course of action in his opinion has many advantages, among them: (1) Saving of time, which is of particular importance to those who expect to do graduate work; (2) the opportunity to enter at once into the purposeful and stimulating professional atmosphere of the engineering college, and (3) the ready availability of guidance for engineering freshmen in the selection of a professional curriculum.

Another difficulty suggested by a college official is that "the major reason for lack of interest in the plan is the expectation of military service . . . The ROTC program does not fit in with a five-year college course, and I suspect that draft boards are not very sympathetic to such a program."

Scholastic Success

Few data are available on the scholastic success of three-two students. The most complete statement indicates that over a period of 5 years the three-two students have earned slightly higher average grades than the institution's regular students have. It is pointed out, however, that these figures should be used cautiously, since the institution accepts only students who are recommended by the collaborating colleges, which frequently demand a dean's list rating with no mark below "B" in mathematics and science. In other words, the three-two students are a highly selected group.

Another official states that the scholastic records of three-two students in his institution are above the all-student average by about 25 percent. Several other officials state that the three-two students do as well as the regular students, or better.

Advantages to the College

Several institutional officials speak of the advantages to the engineering college inherent in this plan. One says that the combined plan provides the engineering college "the opportunity to concentrate its effort upon giving an outstanding engineering education to a group of mature, highly selected students who have had full opportunity to determine their choice of career."

Another points out that vacancies caused by attrition in freshman and sophomore engineering classes can be filled by these excellent students. He says further that "we feel there is a beneficial influence brought to our campus by these transfer students, who have had educational and social experiences different from those of our own students."

Two others call attention to the fact that the nonengineering college attracts students it might not otherwise get, and avoids the expense of setting up an engineering curriculum.

It is to be presumed that the nonengineering part of the program operates as a screening device to help select the students who have strong aptitudes and abilities for the engineering part of the program.

General Appraisal of Plan

The expansion which has taken place in the adoption of the three-two program indicates rather clearly that this type of program is a worthwhile development in the general field of engineering education. While it is still new enough to be considered as an educational experiment, it holds promise of forming one basis for an effective synthesis of liberal and technical education.

However, the rate of growth in number of programs has declined since 1955, while a growing number of colleges have increased the "humanistic-social" content of their engineering curriculums.

The data concerning the three-two plan of education which were collected in connection with the preparation of the bulletin on *Trends in Engineering Education, 1949 to 1959*, which has been previously mentioned, show that prior to June 1949 eight three-two programs had been established. Between June 1949 and June 1955, 29 new three-two programs were established, an average of 4.8 per year. Between June 1956 and June 1959 there were 11 new programs established, an average of 3.7 per year, and 7 were established in years which were not stated on the information supplied by the engineering institutions. During the 10-year period three programs had been discontinued, and the colleges reported that four additional programs were definitely planned to be started during 1960 and 1961, an average of 2.0 per year.

The date of June 1955 mentioned above is used as a dividing point in the time sequence because in that year the American Society for Engineering Education published its report on "Evaluation of Engineering Education." This report has had a marked effect on engineering education, and many institutions have taken action toward implementing its recommendations.

Among these recommendations was one concerned with the distribution of time in engineering curriculums among five major blocks of courses, one of which is called "humanistic-social studies." The committee recommended that in a scientifically oriented engineering curriculum about one-fifth of the total time should be devoted to this block of courses.

The data collected in the fall of 1959 indicate that between 1949 and 1955 a total of 86 curriculums had been modified, an average of 14 per year. Between 1956 and 1959, the date of the questionnaire, 113 curriculum changes had been made, an average of 28 per year. Definite plans were reported for 114 curriculum changes during the years 1960 and 1961, an average of 57 per year.

Of the changes reported in the humanistic-social content, 195 were in the direction of an increased amount of time devoted to these courses, as compared to 39 changes in the opposite direction. The average percentage of curriculum devoted to this block of courses had increased continuously from 14.5 in 1949 to 14.7 in 1955, to 17.0 in 1959, and to 18.3 projected for 1961.

Since one of the major objectives of the three-two program is to give opportunity for strengthening the liberal content of an engineering education, it is interesting to compare the two trends mentioned above. It can readily be seen that while the numbers of three-two curriculums have increased over the entire period, the rate of increase has been much slower than has been the rate of increase in the percentage of the regular engineering curriculum devoted to this block of courses. Perhaps it is only logical that as one method of strengthening the humanistic-social content increases the other might be expected to increase at a slower rate, which has actually happened.

The number of students enrolled in the engineering part of the three-two program and the numbers of students who have actually completed the entire program indicate quite clearly that numerically the three-two program is not making a very large contribution to the production of engineers for the Nation. However, the combined program does provide a broader and more diversified type of education than is provided by the 4-year engineering curriculum alone.

Institutions Conducting Three-Two Programs

The two lists which follow contain names of the institutions which were conducting three-two programs in the fall of 1959. In the first list, starting on page 10, the engineering colleges are listed by geographic location, and the name of each engineering college is followed by a list of the nonengineering colleges which were collaborating with it in the conduct of these programs. This will enable anyone interested to determine quickly and easily which engineering colleges are conducting this type of program, and to ascertain for any particular engineering college which nonengineering colleges are collaborating with it.

In the second list, starting on page 20, the nonengineering colleges are listed alphabetically by location, the name of each being followed by the names of the engineering college or colleges with which it is collaborating in the conduct of these programs. This table will enable an interested person to determine quickly and easily whether or not a particular nonengineering college is engaged in this type of program, and if so, with which engineering college or colleges it is collaborating.

1. Engineering Colleges Conducting Three-Two Programs and Collaborating Nonengineering Colleges: Fall of 1959

Engineering College and Location	*Collaborating Nonengineering College(s)*
Arkansas	
UNIVERSITY OF ARKANSAS.... Fayetteville	Ouchita Baptist College, Arkadelphia, Ark. College of the Ozarks, Clarksville, Ark.
California	
CALIFORNIA INSTITUTE OF TECHNOLOGY. Pasadena	Occidental College, Los Angeles, Calif. Pomona College, Claremont, Calif. Wesleyan University, Middletown, Conn. Grinnell College, Grinnell, Iowa Bowdoin College, Brunswick, Maine Brandeis University, Waltham, Mass. Ohio Wesleyan University, Delaware, Ohio Reed College, Portland, Oreg. Whitman College, Walla Walla, Wash.
LOYOLA UNIVERSITY OF LOS ANGELES.	Univ. of San Diego, San Diego, Calif.
STANFORD UNIVERSITY..... Stanford	Claremont Men's College, Claremont, Calif. George Pepperdine College, Los Angeles, Calif. University of Redlands, Redlands, Calif. Whittier College, Whittier, Calif. College of Idaho, Caldwell, Idaho. Knox College, Galesburg, Ill. Central College, Fayette, Mo. Hastings College, Hastings, Nebr. Willamette University, Salem, Oreg. Pacific Lutheran College, Tacoma, Wash.
UNIVERSITY OF SANTA CLARA..	Univ. of San Diego, San Diego, Calif.
UNIVERSITY OF SOUTHERN CALIFORNIA. Los Angeles	Whittier College, Whittier, Calif. Willamette University, Salem, Oreg. Pacific Lutheran College, Tacoma, Wash.
Colorado	
COLORADO COLLEGE..... Colorado Springs	Stanford University, Stanford, Calif. University of Illinois, Urbana, Ill. Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y. Carnegie Institute of Technology, Pittsburgh, Pa.

Engineering College and Location	*Collaborating Nonengineering College(s)*
Colorado—Con.	
COLORADO STATE UNIVERSITY. Fort Collins	Whittier College, Whittier, Calif. Mexico City College, Mexico
UNIVERSITY OF DENVER	Hastings College, Hastings, Nebr. Augustana College, Sioux Falls, S. Dak. Pacific Lutheran College, Tacoma, Wash.
Delaware	
UNIVERSITY OF DELAWARE. Newark	University of Delaware, Newark, Del.
Florida	
UNIVERSITY OF FLORIDA. Gainesville	Stetson University, De Land, Fla.
Georgia	
GEORGIA INSTITUTE OF TECHNOLOGY. Atlanta	University of Georgia, Athens, Ga. Davidson College, Davidson, N.C. University of Chattanooga, Chattanooga, Tenn. Southwestern at Memphis, Memphis, Tenn. University of the South, Sewanee, Tenn.
Idaho	
UNIVERSITY OF IDAHO. Moscow	College of Idaho, Caldwell, Idaho Northwest Nazarene College, Nampa, Idaho
Illinois	
NORTHWESTERN UNIVERSITY. Evanston	Willamette University, Salem, Oreg.
UNIVERSITY OF ILLINOIS. Urbana	Colorado College, Colorado Springs, Colo. Greenville College, Greenville, Ill. MacMurray College, Jacksonville, Ill. Rockford College, Rockford, Ill. St. Joseph's College, Rensselaer, Ind.

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Engineering College and Location	*Collaborating Nonengineering College(s)*
Indiana	
UNIVERSITY OF NOTRE DAME..	DePaul University, Chicago, Ill. Marian College, Indianapolis, Ind. University of Notre Dame, Notre Dame, Ind. St. Joseph's College, Rensselaer, Ind. St. Mary's College, Notre Dame, Ind. Loras College, Dubuque, Iowa St. Benedict's College, Atchison, Kans. Bellarmine College, Louisville, Ky. Villa Madonna College, Covington, Ky. College of St. Thomas, St. Paul, Minn Carroll College, Helena, Mont. King's College, Briarcliff Manor, N.Y. Belmont Abbey College, Belmont, N.C. St. Francis College, Loretto, Pa. St. Vincent College, Latrobe, Pa. Mount Mary College, Milwaukee, Wis. Universidad de los Andes, Bogotá, Colombia, S.A. Mexico City College, Mexico City, Mexico
PURDUE UNIVERSITY..... Lafayette	Ball State Teachers College, Muncie, Ind. DePauw University, Greencastle, Ind. Marian College, Indianapolis, Ind. St. Joseph's College, Rensselaer, Ind.
ROSE POLYTECHNIC INSTITUTE. Terre Haute	DePauw University, Greencastle, Ind. St. Joseph's College, Rensselaer, Ind.
VALPARAISO UNIVERSITY..... Valparaiso	Carthage College, Carthage, Ill. Valparaiso University, Valparaiso, Ind. Wagner College, Staten Island, N.Y.
Iowa	
STATE UNIVERSITY OF IOWA... Iowa City	Grinnell College, Grinnell, Iowa Loras College, Dubuque, Iowa Morningside College, Sioux City, Iowa State University of Iowa, Iowa City, Iowa Wartburg College, Waverly, Iowa
Kansas	
KANSAS STATE UNIVERSITY.... Manhattan	Baker University, Baldwin City, Kans. Bethany College, Lindsborg, Kans. College of Emporia, Emporia, Kans. Fort Hays Kansas State College, Hays, Kans. McPherson College, McPherson, Kans. Ottawa University, Ottawa, Kans. St. Benedict's College, Atchison, Kans. Sterling College, Sterling, Kans. Tabor College, Hillsboro, Kans. Washburn University of Topeka, Topeka, Kans.
UNIVERSITY OF WICHITA..... Wichita	University of Wichita, Wichita, Kans.

Engineering College and Location	*Collaborating Nonengineering College(s)*
Maryland	
JOHNS HOPKINS UNIVERSITY, Baltimore	Western Maryland College, Westminster, Md.
Massachusetts	
TUFTS UNIVERSITY, Medford	Tufts University, Medford, Mass.
Michigan	
UNIVERSITY OF MICHIGAN, Ann Arbor	Albion College, Albion, Mich. Alma College, Alma, Mich. Central Michigan University, Mount Pleasant, Mich. Calvin College, Grand Rapids, Mich. Eastern Michigan University, Ypsilanti, Mich. Emmanuel Missionary College, Berrien Springs, Mich. Kalamazoo College, Kalamazoo, Mich. University of Michigan, Ann Arbor, Mich.
Missouri	
MISSOURI SCHOOL OF MINES, Rolla	Illinois College, Jacksonville, Ill. Central College, Fayette, Mo. Central Missouri State Coll., Warrensburg, Mo. Culver-Stockton College, Canton, Mo. Drury College, Springfield, Mo. Missouri Valley College, Marshall, Mo. Northeast Missouri State Teachers Coll., Kirksville, Mo. Northwest Missouri State Coll., Maryville, Mo. Park College, Parkville, Mo. William Jewell College, Liberty, Mo.
ST. LOUIS UNIVERSITY, St. Louis	Rockhurst College, Kansas City, Mo.
UNIVERSITY OF MISSOURI, Columbia	Culver-Stockton College, Canton, Ill. Central College, Fayette, Mo. Central Missouri State Coll., Warrensburg, Mo. Missouri Valley College, Marshall, Mo. University of Missouri, Columbia, Mo. Northeast Missouri State Teachers Coll., Kirksville, Mo. Northwest Missouri State Coll., Maryville, Mo. Tarkio College, Tarkio, Mo.
Montana	
MONTANA STATE COLLEGE, Bozeman	Carroll College, Helena, Mont.
New Jersey	
RUTGERS UNIVERSITY, New Brunswick	Rutgers University, New Brunswick, N.J.

Engineering College and Location	*Collaborating Nonengineering College(s)*
New York	
CITY COLLEGE OF CITY OF NEW YORK.	City College of City of New York, New York, N.Y.
COLUMBIA UNIVERSITY, New York	Hendrix College, Conway, Ark. Occidental College, Los Angeles, Calif. San Francisco State College, San Francisco, Calif. Colorado College, Colorado Springs, Colo. Trinity College, Hartford, Conn. Wesleyan University, Middletown, Conn. Knox College, Galesburg, Ill. DePauw University, Greencastle, Ind. Wabash College, Crawfordsville, Ind. Grinnell College, Grinnell, Iowa Centre College of Kentucky, Danville, Ky. Bowdoin College, Brunswick, Maine Albion College, Albion, Mich. Carleton College, Northfield, Minn. Millsaps College, Jackson, Miss. William Jewell College, Liberty, Mo. Doane College, Crete, Nebr. Nebraska Wesleyan University, Lincoln, Nebr. Alfred University, Alfred, N.Y. Bard College, Annandale-on-Hudson, N.Y. Colgate University, Hamilton, N.Y. Columbia College for Men, New York, N.Y. Hamilton College, Clinton, N.Y. Hobart and William Smith Colleges, Geneva, N.Y. Hofstra College, Hempstead, N.Y. Queens College, New York, N.Y. St. Lawrence University, Canton, N.Y. Davidson College, Davidson, N.C. Baldwin-Wallace, Berea, Ohio Marietta College, Marietta, Ohio Miami University, Oxford, Ohio Wittenberg University, Springfield, Ohio Reed College, Portland, Oreg. Willamette University, Salem, Oreg. Allegheny College, Meadville, Pa. Franklin and Marshall College, Lancaster, Pa. Juniata College, Huntingdon, Pa. Muhlenberg College, Allentown, Pa. Wofford College, Spartanburg, S.C. University of the South, Sewanee, Tenn. Middlebury College, Middlebury, Vt. Washington and Lee University, Lexington, Va. Whitman College, Walla Walla, Wash. Bethany College, Bethany, W. Va. Beloit College, Beloit, Wis.

Engineering College and Location	*Collaborating Nonengineering College(s)*
NEW YORK UNIVERSITY..... University Heights	Rollins College, Winter Park, Fla. Adelphi College, Garden City, N.Y. New York University, Washington Square, New York, N.Y. Wagner College, Staten Island, N.Y. Yeshiva College, Amsterdam, N.Y.
RENSSELAER POLYTECHNIC INSTITUTE. Troy, N.Y.	Colorado College, Colorado Springs, Colo. Trinity College, Hartford, Conn. Earlham College, Richmond, Ind. Grinnell College, Grinnell, Iowa Bates College, Lewiston, Maine Colgate University, Hamilton, N.Y. Hamilton College, Clinton, N.Y. St. Lawrence University, Canton, N.Y. Denison University, Granville, Ohio Kenyon College, Gambier, Ohio Ohio Wesleyan University, Delaware, Ohio Reed College, Portland, Oreg. Allegheny College, Meadville, Pa. Dickinson College, Carlisle, Pa. Franklin and Marshall College, Lancaster, Pa. University of South, Sewanee, Tenn. Middlebury College, Middlebury, Vt. Washington and Lee University, Lexington, Va.
SYRACUSE UNIVERSITY..... Syracuse	Syracuse University, Syracuse, N.Y.
UNION COLLEGE AND UNIVERSITY. Schenectady	Union College, Schenectady, N.Y.
UNIVERSITY OF BUFFALO.....	University of Buffalo, Buffalo, N.Y.
UNIVERSITY OF ROCHESTER..	University of Rochester, Rochester, N.Y.
North Carolina	
DUKE UNIVERSITY..... Durham	American University, Washington, D.C. Stetson University, De Land, Fla. Illinois Wesleyan University, Bloomington, Ill. Davidson College, Davidson, N.C. Elon College, Elon College, N.C. Wake Forest College, Winston-Salem, N.C. Wofford College, Spartanburg, S.C. Middlebury College, Middlebury, Vt.
NORTH CAROLINA STATE COLLEGE. Raleigh	Belmont Abbey, Belmont, N.C. Elon College, Elon College, N.C. Wake Forest College, Winston-Salem, N.C. Western Carolina College, Cullowhee, N.C.

Engineering College and Location	*Collaborating Nonengineering College(s)*
Ohio	
CASE INSTITUTE OF TECHNOLOGY. Cleveland	Monmouth College, Monmouth, Ill. DePauw University, Greencastle, Ind. Earlham College, Richmond, Ind. Coe College, Cedar Rapids, Iowa Kenyon College, Gambier, Ohio Marietta College, Marietta, Ohio Miami University, Oxford, Ohio Oberlin College, Oberlin, Ohio Ohio Wesleyan University, Delaware, Ohio Wittenberg University, Springfield, Ohio Dickinson College, Carlisle, Pa.
OHIO NORTHERN UNIVERSITY. Ada	Bluffton College, Bluffton, Ohio Defiance College, Defiance, Ohio Findlay College, Findlay, Ohio Ohio Northern University, Ada, Ohio
UNIVERSITY OF DAYTON	Villa Madonna College, Covington, Ky.
Oregon	
OREGON STATE COLLEGE. Corvallis	Pacific Lutheran College, Tacoma, Wash.
Pennsylvania	
BUCKNELL UNIVERSITY. Lewisburg	Albright College, Reading, Pa. Lycoming College, Williamsport, Pa. West Virginia Wesleyan College, Buckhannon, W. Va.
CARNEGIE INSTITUTE OF TECHNOLOGY. Pittsburgh	Colorado College, Colorado Springs, Colo. DePauw University, Greencastle, Ind. Wabash College, Crawfordsville, Ind. Colby College, Waterville, Maine Brandeis University, Waltham, Mass. Albion College, Albion, Mich. University of Kansas City, Kansas City, Mo. Baldwin-Wallace College, Berea, Ohio Capital University, Columbus, Ohio Denison University, Granville, Ohio Hiram College, Hiram, Ohio Kenyon College, Gambier, Ohio Ohio Wesleyan University, Delaware, Ohio Otterbein College, Westerville, Ohio Willamette University, Salem, Oreg. Allegheny College, Meadville, Pa. Franklin and Marshall College, Lancaster, Pa. Geneva College, Beaver Falls, Pa. Juniata College, Huntingdon, Pa. St. Vincent College, Latrobe, Pa. Thiel College, Greenville, Pa. Washington and Jefferson College, Washington, Pa. Westminster College, New Wilmington, Pa. Fisk University, Nashville, Tenn. Washington and Lee University, Lexington, Va. Pacific Lutheran College, Tacoma, Wash. Bethany College, Bethany, W. Va.

Engineering College and Location	*Collaborating Nonengineering College(s)*
Pennsylvania—Con.	
LAFAYETTE COLLEGE, Easton	College of Idaho, Caldwell, Idaho Hanover College, Hanover, Ind. Coe College, Cedar Rapids, Iowa University of Dubuque, Dubuque, Iowa College of Emporia, Emporia, Kans. Centre College, Danville, Ky. Alma College, Alma, Mich. Macalester College, St. Paul, Minn. Tougaloo College, Tougaloo, Miss. Missouri Valley College, Marshall, Mo. Park College, Parkville, Mo. Hastings College. Hastings, Nebr. Muskingum College, New Concord, Ohio Lewis and Clark College, Portland, Oreg. Lincoln University, Lincoln University, Pa. Moravian College, Bethlehem, Pa. Waynesburg College, Waynesburg, Pa. Westminster College, New Wilmington, Pa. Knoxville College, Knoxville, Tenn. Tusculum College, Greeneville, Tenn. Austin College, Sherman, Tex. Trinity University, San Antonio, Tex. Westminster College, Salt Lake City, Utah Whitworth College, Spokane, Wash. Morris Harvey College, Charleston, W. Va.
PENNSYLVANIA STATE UNIVERSITY, University Park	Albright College, Reading, Pa. Elizabethtown College, Elizabethtown, Pa. Gettysburg College, Gettysburg, Pa. Lycoming College, Williamsport, Pa. St. Francis College, Loretto, Pa. St. Vincent College, Latrobe, Pa. Westminster College, New Wilmington, Pa.
UNIVERSITY OF PENNSYLVANIA, Philadelphia	Marietta College, Marietta, Ohio Mount Union College, Alliance, Ohio Albright College, Reading, Pa. Dickinson College, Carlisle, Pa. Franklin and Marshall College, Lancaster, Pa. Lebanon Valley College, Annville, Pa. Moravian College, Bethlehem, Pa. Muhlenberg College, Allentown, Pa. Susquehanna University, Selinsgrove, Pa. University of Pennsylvania, Philadelphia, Pa. Ursinus College, Collegeville, Pa. West Virginia Wesleyan College, Buckhannon, W. Va.

Engineering College and Location	*Collaborating Nonengineering College(s)*
Pennsylvania—Con.	
UNIVERSITY OF PITTSBURGH	Geneva College, Beaver Falls, Pa. St. Francis College, Loretto, Pa. St. Vincent College, Latrobe, Pa. University of Pittsburgh, Pittsburgh, Pa. Waynesburg College, Waynesburg, Pa. West Virginia Wesleyan College, Buckhannon, W. Va. University of the Andes, Bogota, Colombia, S. A.
Tennessee	
UNIVERSITY OF TENNESSEE Knoxville	Austin Peay State College, Clarksville, Tenn. Belmont College, Nashville, Tenn. Bethel College, McKenzie, Tenn. Carson-Newman College, Jefferson, Tenn. Cumberland University, Lebanon, Tenn. David Lipscomb College, Nashville, Tenn. East Tennessee State College, Johnson, Tenn. King College, Bristol, Tenn. Lincoln Memorial University, Harrogate, Tenn. Memphis State University, Memphis, Tenn. Middle Tennessee State College, Murfreesboro, Tenn. Southwestern at Memphis, Memphis, Tenn. Union University, Jackson, Tenn. University of Chattanooga, Chattanooga, Tenn.
VANDERBILT UNIVERSITY Nashville	Birmingham-Southern, Birmingham, Ala. Howard College, Birmingham, Ala. Ouachita College, Arkadelphia, Ark. Centre College, Danville, Ky. Murray State College, Murray, Ky. Millsaps College, Jackson, Miss. Central College, Fayette, Mo. Christian Brothers College, Memphis, Tenn. Lambuth College, Jackson, Tenn. Southwestern at Memphis, Memphis, Tenn. University of Chattanooga, Chattanooga, Tenn.
Texas	
TEXAS TECHNOLOGICAL COLLEGE. Lubbock	Abilene Christian College, Abilene, Tex. Baylor University, Waco, Tex. Hardin-Simmons University, Abilene, Tex. McMurry College, Abilene, Tex. Trinity University, San Antonio, Tex.

Engineering College and Location	*Collaborating Nonengineering College(s)*
Texas—Con.	
UNIVERSITY OF TEXAS Austin	Abilene Christian College, Abilene, Tex. Austin College, Sherman, Tex. Baylor University, Waco, Tex. East Texas State College, East Texas, Tex. McMurry College, Abilene, Tex. Sam Houston State Teachers College, Huntsville, Tex. Southwestern University, Georgetown, Tex. Stephen F. Austin State College, Nacogdoches, Tex. Texas Christian University, Ft. Worth, Tex. Trinity University, San Antonio, Tex.
Wisconsin	
MARQUETTE UNIVERSITY Milwaukee	Regis College, Denver, Colo. St. Procopius College, Lisle, Ill. St. Mary's College, Winona, Minn. Carroll College, Helena, Mont. Creighton University, Omaha, Nebr. St. Norbert College, West De Pere, Wis.

2. Nonengineering Colleges Conducting Three-Two Programs and Collaborating Engineering Colleges: Fall of 1959

Nonengineering College and Location	*Collaborating Engineering College(s)*
Alabama	
BIRMINGHAM-SOUTHERN COLLEGE. Birmingham	Vanderbilt University, Nashville, Tenn.
HOWARD COLLEGE Birmingham	Vanderbilt University, Nashville, Tenn.
Arkansas	
COLLEGE OF THE OZARKS Clarksville	University of Arkansas, Fayetteville, Ark.
HENDRIX COLLEGE Conway	Columbia University, New York, N.Y.
OUACHITA COLLEGE Arkadelphia	University of Arkansas, Fayetteville, Ark. Vanderbilt University, Nashville, Tenn.
California	
CLAREMONT MEN'S COLLEGE Claremont	Stanford University, Stanford, Calif.
GEORGE PEPPERDINE COLLEGE. Los Angeles	Stanford University, Stanford, Calif.
OCCIDENTAL COLLEGE Los Angeles	Calif. Inst. of Technology, Pasadena, Calif. Columbia University, New York, N.Y.
POMONA COLLEGE Claremont	Calif. Inst. of Technology, Pasadena, Calif.
SAN FRANCISCO STATE COLLEGE. San Francisco	Columbia University, New York, N.Y.
STANFORD UNIVERSITY Stanford	Colorado College, Colorado Springs, Colo.
UNIVERSITY OF REDLANDS Redlands	Stanford University, Stanford, Calif.
UNIVERSITY OF SAN DIEGO San Diego	Loyola University of Los Angeles, Los Angeles, Calif. University of Santa Clara, Santa Clara, Calif.
WHITTIER COLLEGE Whittier	Stanford University, Stanford, Calif. Univ. of Southern California, Los Angeles, Calif. Colorado State University, Fort Collins, Colo.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Colorado	
COLORADO COLLEGE, Colorado Springs	University of Illinois, Urbana, Ill. Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.
REGIS COLLEGE, Denver	Marquette University, Milwaukee, Wis.
Connecticut	
TRINITY COLLEGE, Hartford	Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y.
WESLEYAN UNIVERSITY, Middletown	Calif. Inst. of Technology, Pasadena, Calif. Columbia University, New York, N.Y.
Delaware	
UNIVERSITY OF DELAWARE, Newark	University of Delaware, Newark, Del.
District of Columbia	
AMERICAN UNIVERSITY, Washington, D.C.	Duke University, Durham, N.C.
Florida	
ROLLINS COLLEGE, Winter Park	New York University, New York, N.Y.
STETSON UNIVERSITY, De Land	University of Florida, Gainesville, Fla. Duke University, Durham, N.C.
Georgia	
UNIVERSITY OF GEORGIA, Athens	Georgia Institute of Technology, Atlanta, Ga.
Idaho	
COLLEGE OF IDAHO, Caldwell	Stanford University, Stanford, Calif. University of Idaho, Moscow, Idaho Lafayette College, Easton, Pa.
NORTHWEST NAZARENE COLLEGE, Nampa	University of Idaho, Moscow, Idaho
Illinois	
CARTHAGE COLLEGE, Carthage	Valparaiso University, Valparaiso, Ind.
DEPAUL UNIVERSITY, Chicago	University of Notre Dame, Notre Dame, Ind.
GREENVILLE COLLEGE, Greenville	University of Illinois, Urbana, Ill.
ILLINOIS COLLEGE, Jacksonville	Missouri School of Mines, Rolla, Mo.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Illinois—Con.	
ILLINOIS WESLEYAN UNIVERSITY. Bloomington	Duke University, Durham, N.C.
KNOX COLLEGE. Galesburg	Stanford University, Stanford, Calif. Columbia University, New York, N.Y.
MACMURRAY COLLEGE. Jacksonville	University of Illinois, Urbana, Ill.
MONMOUTH COLLEGE. Monmouth	Case Inst. of Technology, Cleveland, Ohio
ROCKFORD COLLEGE. Rockford	University of Illinois, Urbana, Ill.
ST. PROCOPIOUS COLLEGE. Lisle	Marquette University, Milwaukee, Wis.
UNIVERSITY OF ILLINOIS. Urbana	Colorado College, Colorado Springs, Colo.
Indiana	
BALL STATE TEACHERS COLLEGE. Muncie	Purdue University, Lafayette, Ind.
DEPAUW UNIVERSITY. Greencastle	Purdue University, Lafayette, Ind. Rose Polytechnic Institute, Terre Haute, Ind. Columbia University, New York, N.Y. Case Inst. of Technology, Cleveland, Ohio Carnegie Inst. of Technology, Pittsburgh, Pa.
EARLHAM COLLEGE. Richmond	Rensselaer Polytechnic Institute, Troy, N.Y. Case Inst. of Technology, Cleveland, Ohio
HANOVER COLLEGE. Hanover	Lafayette College, Easton, Pa.
MARIAN COLLEGE. Indianapolis	University of Notre Dame, Notre Dame, Ind. Purdue University, Lafayette, Ind.
NOTRE DAME UNIVERSITY. Notre Dame	University of Notre Dame, Notre Dame, Ind.
ST. JOSEPH'S COLLEGE. Rensselaer	University of Illinois, Urbana, Ill. University of Notre Dame, Notre Dame, Ind. Purdue University, Lafayette, Ind. Rose Polytechnic Institute, Terre Haute, Ind.
ST. MARY'S College. Notre Dame	University of Notre Dame, Notre Dame, Ind.
VALPARAISO UNIVERSITY. Valparaiso	Valparaiso University, Valapraiso, Ind.
WABASH COLLEGE. Crawfordsville	Columbia University, New York, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Iowa	
COE COLLEGE Cedar Rapids	Case Inst. of Technology, Cleveland, Ohio Lafayette College, Easton, Pa.
GRINNELL COLLEGE Grinnell	Calif. Inst. of Technology, Pasadena, Calif. State University of Iowa, Iowa City, Iowa Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y.
LORAS COLLEGE Dubuque	University of Notre Dame, Notre Dame, Ind. State University of Iowa, Iowa City, Iowa
MORNINGSIDE COLLEGE Sioux City	State University of Iowa, Iowa City, Iowa
UNIVERSITY OF DUBUQUE Dubuque	Lafayette College, Easton, Pa.
STATE UNIVERSITY OF IOWA Iowa City	State University of Iowa, Iowa City, Iowa
WARTBURG COLLEGE Waverly	State University of Iowa, Iowa City, Iowa
Kansas	
BAKER UNIVERSITY Baldwin City	Kansas State University, Manhattan, Kans.
BETHANY COLLEGE Lindsborg	Kansas State University, Manhattan, Kans.
COLLEGE OF EMPORIA Emporia	Lafayette College, Easton, Pa. Kansas State University, Manhattan, Kans.
FORT HAYS KANSAS STATE COLLEGE. Hays	Kansas State University, Manhattan, Kans.
McPHERSON COLLEGE McPherson	Kansas State University, Manhattan, Kans.
OTTAWA UNIVERSITY Ottawa	Kansas State University, Manhattan, Kans.
ST. BENEDICT'S COLLEGE Atchison	University of Notre Dame, Notre Dame, Ind. Kansas State University, Manhattan, Kans.
STERLING COLLEGE Sterling	Kansas State University, Manhattan, Kans.
TABOR COLLEGE Hillsboro	Kansas State University, Manhattan, Kans.
WASHBURN UNIVERSITY OF TOPEKA. Topeka	Kansas State University, Manhattan, Kans.
MUNICIPAL UNIVERSITY OF WICHITA. Wichita	Municipal University of Wichita, Wichita, Kans.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Kentucky	
BELLARMINE COLLEGE, Louisville	University of Notre Dame, Notre Dame, Ind.
CENTRE COLLEGE, Danville	Columbia University, New York, N.Y. Lafayette College, Easton, Pa. Vanderbilt University, Nashville, Tenn.
MURRAY STATE COLLEGE, Murray	Vanderbilt University, Nashville, Tenn.
VILLA MADONNA COLLEGE, Covington	University of Notre Dame, Notre Dame, Ind. University of Dayton, Dayton, Ohio
Maine	
BATES COLLEGE, Lewiston	Rensselaer Polytechnic Institute, Troy, N.Y.
BOWDOIN COLLEGE, Brunswick	Calif. Inst. of Technology, Pasadena, Calif. Columbia University, New York, N.Y.
COLBY COLLEGE, Waterville	Carnegie Inst. of Technology, Pittsburgh, Pa.
Maryland	
WESTERN MARYLAND COLLEGE, Westminster	Johns Hopkins University, Baltimore, Md.
Massachusetts	
BRANDEIS UNIVERSITY, Waltham	Calif. Inst. of Technology, Pasadena, Calif. Carnegie Inst. of Technology, Pittsburgh, Pa.
TUFTS UNIVERSITY, Medford	Tufts University, Medford, Mass.
Michigan	
ALBION COLLEGE, Albion	University of Michigan, Ann Arbor, Mich. Columbia University, New York, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.
ALMA COLLEGE, Alma	University of Michigan, Ann Arbor, Mich. Lafayette College, Easton, Pa.
CALVIN College, Grand Rapids	University of Michigan, Ann Arbor, Mich.
CENTRAL MICHIGAN UNIVERSITY, Mount Pleasant	University of Michigan, Ann Arbor, Mich.
EASTERN MICHIGAN UNIVERSITY, Ypsilanti	University of Michigan, Ann Arbor, Mich.
EMMANUEL MISSIONARY COLLEGE, Berrien Springs	University of Michigan, Ann Arbor Mich.
KALAMAZOO COLLEGE, Kalamazoo	University of Michigan, Ann Arbor, Mich.
UNIVERSITY OF MICHIGAN, Ann Arbor	University of Michigan, Ann Arbor, Mich.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Minnesota	
CARLETON COLLEGE Northfield	Columbia University, New York, N.Y.
Macalester College St. Paul	Lafayette College, Easton, Pa.
ST. MARY'S COLLEGE Winona	Marquette University, Milwaukee, Wis.
THE COLLEGE OF ST. THOMAS St. Paul	University of Notre Dame, Notre Dame, Ind.
Mississippi	
MILLSAPS COLLEGE Jackson	Columbia University, New York, N.Y. Vanderbilt University, Nashville, Tenn.
TOUGALOO SOUTHERN CHRISTIAN COLLEGE. Tougaloo	Lafayette College, Easton, Pa.
Missouri	
CENTRAL COLLEGE Fayette	Stanford University, Stanford, Calif. Missouri School of Mines, Rolla, Mo. University of Missouri, Columbia, Mo. Vanderbilt University, Nashville, Tenn.
CENTRAL MISSOURI STATE COLLEGE. Warrensburg	Missouri School of Mines, Rolla, Mo. University of Missouri, Columbia, Mo.
CULVER STOCKTON COLLEGE Canton	Missouri School of Mines, Rolla, Mo. University of Missouri, Columbia, Mo.
DRURY COLLEGE Springfield	Missouri School of Mines, Rolla, Mo.
MISSOURI VALLEY COLLEGE Marshall	Missouri School of Mines, Rolla, Mo. University of Missouri, Columbia, Mo. Lafayette College, Easton, Pa.
NORTHEAST MISSOURI ST. TEACHERS COLLEGE. Kirksville	Missouri School of Mines, Rolla, Mo. University of Missouri, Columbia, Mo.
NORTHWEST MISSOURI STATE COLLEGE. Maryville	Missouri School of Mines, Rolla, Mo. University of Missouri, Columbia, Mo.
PARK COLLEGE Parkville	Missouri School of Mines, Rolla, Mo. Lafayette College, Easton, Pa.
ROCKHURST COLLEGE Kansas City	St. Louis University, St. Louis, Mo.
TARKIO COLLEGE Tarkio	University of Missouri, Columbia, Mo.
UNIVERSITY OF KANSAS CITY Kansas City	Carnegie Inst. of Technology, Pittsburgh, Pa.
UNIVERSITY OF MISSOURI Columbia	University of Missouri, Columbia, Mo.
WILLIAM JEWELL COLLEGE Liberty	Missouri School of Mines, Rolla, Mo. Columbia University, New York, N.Y.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Montana	
CARROLL COLLEGE, Helena	University of Notre Dame, Notre Dame, Ind. Montana State College, Bozeman, Mont. Marquette University, Milwaukee, Wis
Nebraska	
CREIGHTON UNIVERSITY, Omaha	Marquette University, Milwaukee, Wis.
DOANE COLLEGE, Crete	Columbia University, New York, N.Y.
HASTINGS COLLEGE, Hastings	Stanford University, Stanford, Calif. University of Denver, Denver, Colo. Lafayette College, Easton, Pa.
NEBRASKA WESLEYAN UNIVERSITY, Lincoln	Columbia University, New York, N.Y.
New Jersey	
RUTGERS UNIVERSITY, New Brunswick	Rutgers University, New Brunswick, N.J.
New York	
ADELPHI COLLEGE, Garden City	New York University, New York, N.Y.
ALFRED UNIVERSITY, Alfred	Columbia University, New York, N.Y.
BARD COLLEGE, Annandale-on-Hudson	Columbia University, New York, N.Y.
CITY COLLEGE OF THE COLLEGE OF THE CITY OF NEW YORK.	City College of the College of the City of New York, New York, N.Y.
COLGATE UNIVERSITY, Hamilton	Columbia University, New York, N. Y. Rensselaer Polytechnic Institute, Troy, N.Y.
COLUMBIA COLLEGE FOR MEN, New York	Columbia University, New York, N.Y.
COLUMBIA UNIVERSITY, New York	Colorado College, Colorado Springs, Colo.
HAMILTON COLLEGE, Clinton	Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y.
HOBART AND WILLIAM SMITH COLLEGES. Geneva	Columbia University, New York, N.Y.
HOFSTRA COLLEGE, Hempstead	Columbia University, New York, N.Y.
KING'S COLLEGE, Briarcliff Manor	University of Notre Dame, Notre Dame, Ind.
NEW YORK UNIVERSITY, University Heights	New York University, New York, N.Y.
NEW YORK UNIVERSITY, Washington Square	New York University, New York, N.Y.

Nonengineering College and Location	*Collaborating Engineering College(s)*
New York—Con.	
QUEENS COLLEGE New York	Columbia University, New York, N.Y.
RENSSELAER POLYTECHNIC INSTITUTE. Troy	Colorado College, Colorado Springs, Colo.
ST. LAWRENCE UNIVERSITY Canton	Columbia University, New York Rensselaer Polytechnic Institute, Troy, N.Y.
SYRACUSE UNIVERSITY Syracuse	Syracuse University, Syracuse, N.Y.
UNION COLLEGE Schenectady	Union College, Schenectady, N.Y.
UNIVERSITY OF BUFFALO Buffalo	University of Buffalo, Buffalo, N.Y.
UNIVERSITY OF ROCHESTER Rochester	University of Rochester, Rochester, N.Y.
WAGNER COLLEGE Staten Island	Valparaiso University, Valparaiso, Ind. New York University, New York, N.Y.
YESHIVA UNIVERSITY Amsterdam	New York University, New York, N.Y.
North Carolina	
BELMONT ABBEY COLLEGE Belmont	University of Notre Dame, Notre Dame, Ind. North Carolina State College, Raleigh, N.C.
DAVIDSON COLLEGE Davidson	Georgia Institute of Technology, Atlanta, Ga. Columbia University, New York, N.Y. Duke University, Durham, N.C.
ELON COLLEGE Elon College	Duke University, Durham, N.C. North Carolina State College, Raleigh, N.C.
WAKE FOREST COLLEGE Winston-Salem	Duke University, Durham, N.C North Carolina State College, Raleigh, N.C.
WESTERN CAROLINA COLLEGE. Cullawhee	North Carolina State College, Raleigh, N.C.
Ohio	
BALDWIN-WALLACE COLLEGE Berea	Columbia University, New York, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.
BLUFFTON COLLEGE Bluffton	Ohio Northern University, Ada, Ohio
CAPITAL UNIVERSITY Columbus	Carnegie Inst. of Technology, Pittsburgh, Pa.
DEFIANCE COLLEGE Defiance	Ohio Northern University, Ada, Ohio
DENISON UNIVERSITY Granville	Rensselaer Polytechnic Institute, Troy, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Ohio—Con.	
FINDLAY UNIVERSITY Findlay	Ohio Northern University, Ada, Ohio
HIRAM COLLEGE Hiram	Carnegie Inst. of Technology, Pittsburgh, Pa.
KENYON COLLEGE Gambier	Rensselaer Polytechnic Institute, Troy, N.Y. Case Inst. of Technology, Cleveland, Ohio Carnegie Inst. of Technology, Pittsburgh, Pa.
MARIETTA COLLEGE Marietta	Columbia University, New York, N.Y. Case Inst. of Technology, Cleveland, Ohio University of Pennsylvania, Philadelphia, Pa.
MIAMI UNIVERSITY Oxford	Columbia University New York, N.Y. Case Inst. of Technology, Cleveland, Ohio
MOUNT UNION COLLEGE Alliance	University of Pennsylvania, Philadelphia, Pa.
MUSKINGUM COLLEGE New Concord	Lafayette College, Easton, Pa.
OBERLIN COLLEGE Oberlin	Case Inst. of Technology, Cleveland, Ohio
OHIO NORTHERN UNIVERSITY Ada	Ohio Northern University, Ada, Ohio
OHIO WESLEYAN UNIVERSITY. Delaware	Calif. Inst. of Technology, Pasadena, Calif. Rensselaer Polytechnic Institute, Troy, N.Y. Case Inst. of Technology, Cleveland, Ohio Carnegie Inst. of Technology, Pittsburgh, Pa.
OTTERBEIN COLLEGE Westerville	Carnegie Inst. of Technology, Pittsburgh, Pa.
WITTENBERG UNIVERSITY Springfield	Columbia University, New York, N.Y. Case Inst. of Technology, Cleveland, Ohio
Oregon	
LEWIS AND CLARK COLLEGE Portland	Lafayette College, Easton, Pa.
REED COLLEGE Portland	Calif. Inst. of Technology, Pasadena, Calif. Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y.
WILLAMETTE UNIVERSITY Salem	Stanford University, Stanford, Calif. Univ. of Southern California, Los Angeles, Calif. Northwestern University, Evanston, Ill. Columbia University, New York, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.
Pennsylvania	
ALBRIGHT COLLEGE Reading	Bucknell University, Lewisburg, Pa. Pennsylvania State University, University Park, Pa. University of Pennsylvania, Philadelphia, Pa.
ALLEGHENY COLLEGE Meadville	Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Pennsylvania—Con.	
CARNEGIE INSTITUTE OF TECHNOLOGY. Pittsburgh	Colorado College, Colorado Springs, Colo.
DICKINSON COLLEGE. Carlisle	Rensselaer Polytechnic Institute, Troy, N.Y Case Inst. of Technology, Cleveland, Ohio University of Pennsylvania, Philadelphia, Pa.
ELIZABETHTOWN COLLEGE. Elizabethtown	Pennsylvania State University, University Park, Pa.
FRANKLIN AND MARSHALL COLLEGE. Lancaster	Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa. University of Pennsylvania, Philadelphia, Pa.
GENEVA COLLEGE. Beaver Falls	Carnegie Inst. of Technology, Pittsburgh, Pa. University of Pittsburgh, Pittsburgh, Pa.
GETTYSBURG COLLEGE. Gettysburg	Pennsylvania State University, University Park, Pa.
JUNIATA COLLEGE. Huntingdon	Columbia University, New York, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.
LEBANON VALLEY COLLEGE. Annville	University of Pennsylvania, Philadelphia, Pa.
LINCOLN UNIVERSITY. Lincoln University	Lafayette College, Easton, Pa.
LYCOMING COLLEGE. Williamsport	Bucknell University, Lewisburg, Pa. Pennsylvania State University, University Park, Pa.
MORAVIAN COLLEGE. Bethlehem	Lafayette College, Easton, Pa. University of Pennsylvania, Philadelphia, Pa.
MUHLENBERG COLLEGE. Allentown	Columbia University, New York, N.Y. University of Pennsylvania, Philadelphia, Pa.
ST. FRANCIS COLLEGE. Loretto	University of Notre Dame, Notre Dame, Ind. Pennsylvania State University, University Park, Pa. University of Pittsburgh, Pittsburgh, Pa.
ST. VINCENT COLLEGE. Latrobe	University of Notre Dame, Notre Dame, Ind. Carnegie Inst. of Technology, Pittsburgh, Pa. Pennsylvania State University, University Park, Pa. University of Pittsburgh, Pittsburgh, Pa.
SUSQUEHANNA UNIVERSITY. Selinsgrove	University of Pennsylvania, Philadelphia, Pa.
THIEL COLLEGE. Greenville	Carnegie Inst. of Technology, Pittsburgh, Pa.
UNIVERSITY OF PENNSYLVANIA. Philadelphia	University of Pennsylvania, Philadelphia Pa.
UNIVERSITY OF PITTSBURGH. Pittsburgh	University of Pittsburgh, Pittsburgh, Pa.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Pennsylvania—Con.	
URSINUS COLLEGE---------- Collegeville	University of Pennsylvania, Philadelphia, Pa.
WASHINGTON AND JEFFERSON-- Washington	Carnegie Inst. of Technology, Pittsburgh, Pa.
WAYNESBURG COLLEGE------- Waynesburg	Lafayette College, Easton, Pa. University of Pittsburgh, Pittsburgh, Pa.
WESTMINSTER COLLEGE------ New Wilmington	Carnegie Inst. of Technology, Pittsburgh, Pa. Lafayette College, Easton, Pa. Pennsylvania State University, University Park, Pa
South Carolina	
WOFFORD COLLEGE---------- Spartanburg	Columbia University, New York, N.Y. Duke University, Durham, N.C.
South Dakota	
AUGUSTANA COLLEGE-------- Sioux Falls	University of Denver, Denver, Colo.
Tennessee	
AUSTIN PEAY STATE COLLEGE- Clarksville	University of Tennessee, Knoxville, Tenn.
BELMONT COLLEGE---------- Nashville	University of Tennessee, Knoxville, Tenn.
BETHEL COLLEGE---------- McKenzie	University of Tennessee, Knoxville, Tenn.
CARSON NEWMAN COLLEGE-- Jefferson	University of Tennessee, Knoxville, Tenn.
CHRISTIAN BROTHERS COLLEGE- Memphis	Vanderbilt University, Nashville, Tenn.
CUMBERLAND UNIVERSITY---- Lebanon	University of Tennessee, Knoxville, Tenn.
DAVID LIPSCOMB COLLEGE--- Nashville	University of Tennessee, Knoxville, Tenn.
EAST TENNESSEE STATE COLLEGE. Johnson City	University of Tennessee, Knoxville, Tenn.
FISK UNIVERSITY---------- Nashville	Carnegie Inst. of Technology, Pittsburgh, Pa.
KING COLLEGE------------ Bristol	University of Tennessee, Knoxville, Tenn.
KNOXVILLE COLLEGE-------- Knoxville	Lafayette College, Easton, Pa.
LAMBUTH COLLEGE---------- Jackson	Vanderbilt University, Nashville, Tenn.
LINCOLN MEMORIAL UNIVERSITY. Harrogate	University of Tennessee, Knoxville, Tenn.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Tennessee—Con.	
MEMPHIS STATE UNIVERSITY. Memphis	University of Tennessee, Knoxville, Tenn.
MIDDLE TENNESSEE STATE COLLEGE. Murfreesboro	University of Tennessee, Knoxville, Tenn.
SOUTHWESTERN AT MEMPHIS. Memphis	Georgia Institute of Technology, Atlanta, Ga. University of Tennessee, Knoxville, Tenn. Vanderbilt University, Nashville, Tenn.
TUSCULUM COLLEGE. Greeneville	Lafayette College, Easton, Pa.
UNION UNIVERSITY. Jackson	University of Tennessee, Knoxville, Tenn.
UNIVERSITY OF CHATTANOOGA. Chattanooga	Georgia Institute of Technology, Atlanta, Ga. University of Tennessee, Knoxville, Tenn. Vanderbilt University, Nashville, Tenn.
UNIVERSITY OF THE SOUTH. Sewanee	Georgia Institute of Technology, Atlanta, Ga. Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y.
Texas	
ABILENE CHRISTIAN COLLEGE. Abilene	Texas Technological College, Lubbock, Tex. University of Texas, Austin, Tex.
AUSTIN COLLEGE. Sherman	Lafayette College, Easton, Pa. University of Texas, Austin, Tex.
BAYLOR UNIVERSITY. Waco	Texas Technological College, Lubbock, Tex. University of Texas, Austin, Tex.
EAST TEXAS STATE COLLEGE. Commerce	University of Texas, Austin, Tex.
HARDIN-SIMMONS UNIVERSITY. Abilene	Texas Technological College, Lubbock, Tex.
McMURRY COLLEGE. Abilene	Texas Technological College, Lubbock, Tex. University of Texas, Austin, Tex.
SAM HOUSTON STATE TEACHERS COLLEGE. Huntsville	University of Texas, Austin, Tex.
SOUTHWESTERN UNIVERSITY. Georgetown	University of Texas, Austin, Tex.
STEPHEN F. AUSTIN STATE COLLEGE. Nacogdoches	University of Texas, Austin, Tex.
TEXAS CHRISTIAN UNIVERSITY. Fort Worth	University of Texas, Austin, Tex.
TRINITY UNIVERSITY. San Antonio	Lafayette College, Easton, Pa. Texas Technological College, Lubbock, Tex. University of Texas, Austin, Tex.

Nonengineering College and Location	*Collaborating Engineering College(s)*
Utah	
WESTMINSTER COLLEGE, Salt Lake City	Lafayette College, Easton, Pa.
Vermont	
MIDDLEBURY COLLEGE, Middlebury	Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y. Duke University, Durham, N.C.
Virginia	
WASHINGTON AND LEE UNIVERSITY, Lexington	Columbia University, New York, N.Y. Rensselaer Polytechnic Institute, Troy, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.
Washington	
PACIFIC LUTHERAN COLLEGE, Tacoma	Stanford University, Stanford, Calif. University of Southern California, Los Angeles, Calif. University of Denver, Denver, Colo. Oregon State College, Corvallis, Oreg. Carnegie Inst. of Technology, Pittsburgh, Pa.
WHITMAN COLLEGE, Walla Walla	Calif. Inst. of Technology, Pasadena, Calif. Columbia University, New York, N.Y.
WHITWORTH COLLEGE, Spokane	Lafayette College, Easton, Pa.
West Virginia	
BETHANY COLLEGE, Bethany	Columbia University, New York, N.Y. Carnegie Inst. of Technology, Pittsburgh, Pa.
MORRIS HARVEY COLLEGE, Charleston	Lafayette College, Easton, Pa.
WEST VIRGINIA WESLEYAN COLLEGE, Buckhannon	Bucknell University, Lewisburg, Pa. University of Pennsylvania, Philadelphia, Pa. University of Pittsburgh, Pittsburgh, Pa.
Wisconsin	
BELOIT COLLEGE, Beloit	Columbia University, New York, N.Y.
MOUNT MARY COLLEGE, Milwaukee	University of Notre Dame, Notre Dame, Ind.
ST. NORBERT COLLEGE, West De Pere	Marquette University, Milwaukee, Wis.
FOREIGN	
South America	
UNIVERSITY DE LOS ANDES, Colombia	University of Notre Dame, Notre Dame, Ind. University of Pittsburgh, Pittsburgh, Pa.
Mexico	
MEXICO CITY COLLEGE, Mexico City	Colorado State University, Fort Collins, Colo. University of Notre Dame, Notre Dame, Ind.

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